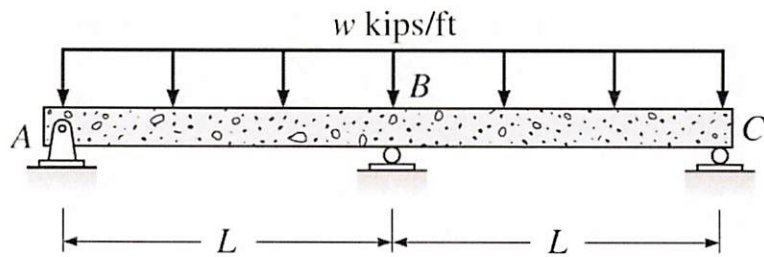
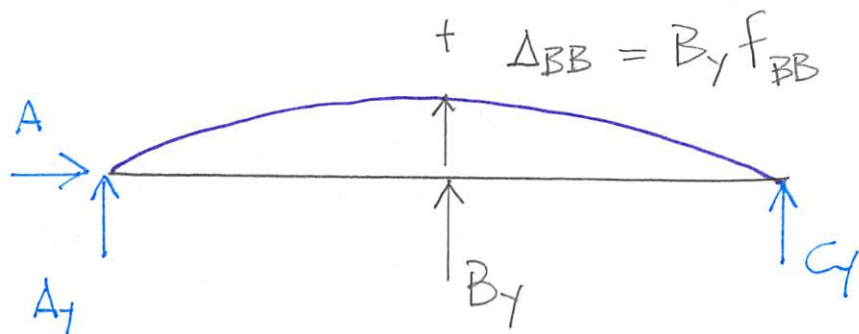
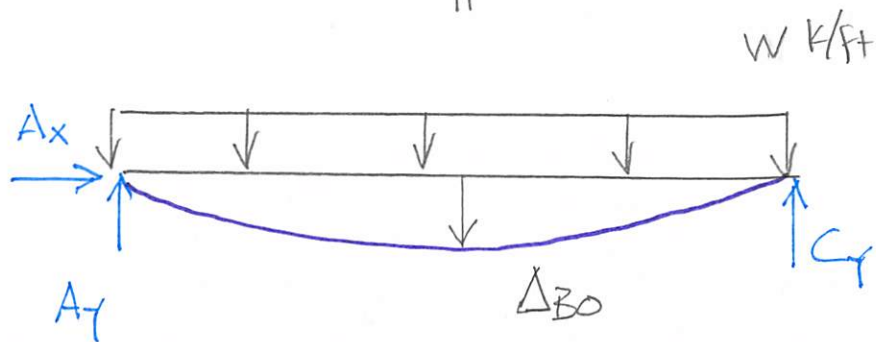


**Problem 9a-1** – Compute the reactions and draw the shear and moment curves for the following beam.



||



$$\Delta_B = 0$$

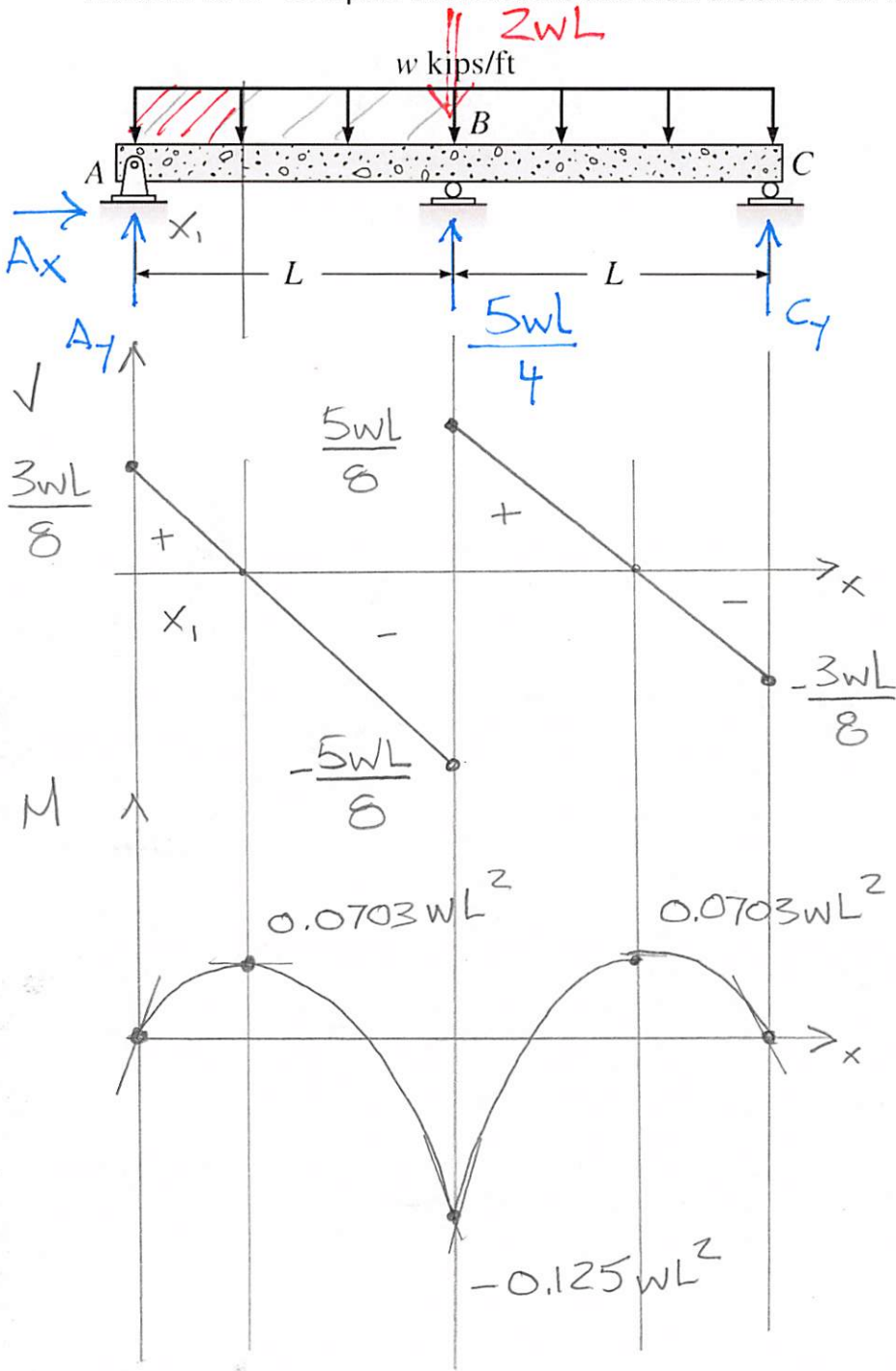
$$\Delta_{B0} = \frac{5w(2L)^4}{384EI}$$

$$\Delta_{BB} = \frac{B_y(2L)^3}{48EI}$$

$$\Delta_B = 0 = -\frac{5w(16L^4)}{384EI} + \frac{B_y(8L^3)}{48EI}$$

$$\underline{\underline{B_y = \frac{5wL}{4} \quad [F/L]L = [F]}}$$

**Problem 9a-1** – Compute the reactions and draw the shear and moment curves for the following beam.



$$\rightarrow \sum F_x = 0 = A_x$$

$$\curvearrowright \sum M_A = 0 = -2wL(L) + \frac{5wL}{4}(L) + C_y(2L)$$

$$C_y = \frac{3wL}{8}$$

$$\uparrow \sum F_y = 0 = A_y + C_y + \frac{5wL}{4} - 2wL$$

$$A_y = \frac{3wL}{8}$$

$$\Delta V = \int w dx \quad \frac{dV}{dx} = w$$

$$-\frac{3wL}{8} = -wx_1 \quad x_1 = \frac{3L}{8}$$

$$\Delta M = \int V dx \quad \frac{dM}{dx} = V$$